



Airborne Laser Induced Fluorescence system for simultaneous measurements of nitrogen dioxide and speciated NO_y

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A new Laser Induced Fluorescence (LIF) system coupled with an inlet box to thermal dissociate selected NO_Y , has been developed at the University of L'Aquila (Italy) and installed on the British FAAM BAe 146 research aircraft. The L'Aquila-LIF includes 4 detection cells to simultaneously measure profiles of NO_2 , total Peroxy Nitrates (PNs), total Alkyl Nitrates (ANs) and HNO_3 . In summer 2010, the LIF was used in two aircraft campaigns called RONOCO and SeptEx, in England. RONOCO was a nighttime campaign focused on the NO_3 budget whereas SeptEx was a daytime campaign focused on the detection of ships and biogenic emissions. In both campaigns were observed very different environments that range from very clean air conditions, polluted air from big city, such as London and marine environment affected by sea breeze and chlorine chemistry. Here will be shown the LIF performances on the BAe 146 aircraft and discussed first results of the campaigns, focusing on NO_X changes due to transport and chemistry in the lower troposphere and on the NO_Y budget taking into account the role of PNs and ANs.